

MODIS Team Meeting Minutes

Minutes of the MODIS Team Meeting held on Tuesday August 2, 1994.

Action Items:

82. Work with the MODIS team to obtain a consensus on a revised MODIS crosstalk specification and provide inputs for a Configuration Change Request. Assigned to Ed Knight 12/14/93. Due 1/11/94
Tabled on 2/ 1/94 until 8/ 1/94 Tabled on 8/ 2/94 until 2/ 2/95
90. Clarify what is required of SBRC to allow GSFC qualification of flight detectors. Assigned to Silva 6/30/94. Due 8/ 2/94 CLOSED 8/ 2/94
91. Clarify the round-robin BRDF measurement requirements. Assigned to Guenther. Due 8/16/94
92. Determine the best way to balance the scan mirror. Assigned to Roberto. 7/19/94. Due 9/ 6/94.
93. Review the Instrument Flight Operations Understanding of 8/26/93. Provide comments by 9/30/94. Assigned to Roberto 8/ 8/94

The following items were distributed:

- 1) Weekly Status Report #149
- 2) SBRC Memos submission from week #141
- 3) Minutes of the previous team meeting

Attendees:

✓ Richard Weber	Bruce Guenther	✓ Larissa Graziani
✓ John Bauernschub	George Daelemans	✓ Bob Martineau
Rosemary Vail	Patricia Weir	✓ Bob Silva
Lisa Shears	✓ Mitch Davis	✓ Robert Kiwak
✓ Mike Roberto	✓ Ken Anderson	✓ Harvey Safren
Nelson Ferragut	Rick Sabatino	✓ Ed Knight
✓ Gene Waluschka	✓ Cherie Congedo	✓ Harry Montgomery
✓ Bill Barnes		Marvin Maxwell
Les Thompson		Bill Mocarsky

MODIS Team Technical Weekly

August 5, 1994

General

Please provide to Ken Anderson between now and August 9 your recommendations for topics to be covered in your technical area during the formal session of the QMR which will be held the morning of September 13 at SBRC. These suggestions should be of general interest to the GSFC team. You will be able to cover other topics in one on one meetings with your technical counterparts the afternoon of September 13 and the morning of September 14. There will then be an action item/wrap-up during the afternoon of September 14. There will be a spacecraft interface meeting on September 15.

We need to try to keep up to date on our weekly reviews of SBRC memos.

Mitch Davis -

- 1) MEM backplane is a nightmare to work on
- 2) power supplies are in the MEM
- 3) FAM is together
- 4) SAM noise problem was an analog post regulator which was not working properly
- 5) One micron Actel FPGAs will be used where speed is important and these will likely be enclosed in shielding to protect from radiation. The slower speed two micron FPGAs will be used for everything else.
- 6) SEEQ EE PROMS need to be ordered.
- 7) SBRC has two non-flight quality Plessey chips, Rev I, which have shown no problem over temperature. There is a problem with the layout for the Memory Management Unit (MMU) and the processor. This means operation over a smaller temperature range. This problem will be corrected for the flight unit.
- 8) Plessey has announced that Rev H should not be used for flight.
- 9) JPL has higher priority for the Plessey Rev H chips and will be getting about 19. However, JPL does not need all of the chips now and SBRC is working with JPL to obtain four of the chips (2 for MODIS).

Gene Waluschka-

Gene documented his trip to SBRC in a telemail message dated July 23:

- 1) The mechanical aspects of the integration of the four objective assemblies and the associated focal planes is going well.
- 2) The most troublesome released news concerns the filter crosstalk between bands 1 and 2.
- 3) Location and registration of pixels is determined by scanning an image of a slit across the focal plane. Readings are taken of focal plane position versus intensity of signal.
- 4) At this early stage of integration, there is some (noise in the focal plane output data which needs to be understood and corrected).
- 5) We should get Lab View software here at GSFC

Bob Martineau-

- 1) S/MWIR PFM SCA has been hybridized and has some parallelism between the top and bottom surfaces of the SCA which do not meet the specified tolerance. A Non Conformance Material Report will be needed. Should not be a problem.
- 2) Three out of thirty S/MWIR die have been tested under low background conditions. There are two or three subarrays per die. Two or three die can be tested per day. The subarrays being hybridized now have not been tested under low light conditions.
- 3) Based on SBRC inputs at the splinter meeting at the time of the June, 1994 QMR, SBRC expects to yield two complete sets of PFM subarrays for the S/MWIR without outages and 3 sets with no more than 2 outages.

4) PC detectors - one PFM PC on motherboard, one identified backup passed NEI and spot scan tests, and SBRC is working on a second backup which has passed NEI and has been spot scanned with results to be determined.

5) LWIR PFM SCA first unit up, not yet mounted on motherboard. This will be ready for test by mid week (about August 3). Seven more SCAs are being started, expect 5 good ones.

6) There is a delay in the VIS/NIR test station validation. A procedure needs to be written to validate the test station.

7) Some small parts are needed for assembly of the motherboards such as temperature sensors and resistors, expected Wednesday.

Science and calibration SRCA-Nainzeng Che from Swales, Ed Knight, Peter Abel, Harry Montgomery, and Gene Waluschka discussed Che's paper on calibration. This has to do with the wavelength at the output slit of the SRCA versus the wavelength at the diode next to the slit. Che has two equations with three unknowns. By defining a constraint, Che can develop the third equation.

Gene talked to Eric Johnson about this and Eric thinks the problem is one of geometry.

Dick Weber commented on measuring the wavelength at the SRCA exit slit diode as opposed to doing the analysis.

Harvey Safren -

1) Vern Alferd not sure what was being done about the \$800K problem.

2) Blackbody calibrator was heated to 100 degrees C. Some surface cracking problems. Some outgassing at 380 K. There may be a problem with the way the BB was polished or with the anodize.

Cherie Congedo -

Cherie has prepared a memo, dated July 26, updating the latest MODIS STOP analysis, based on a review of the MODIS cooler reflector done by Jim Mayor of Swales. Jim's analysis shows the stress levels exceed the probable buckling allowable of the shell. Although Jim could not state with certainty that the reflector would fail, his personal judgment was that it would not fail. However, based on Jim's analysis, Cherie concludes that the STOP results documented in her 3/1/94 memo are in doubt. Results from the 3/1/94 memo represent best case results. Worse case performance predictions would be obtained by assuming the radiation shield provides no stiffness to the cooler. Cherie does not expect the actual pointing and coregistration errors of MODIS to meet performance requirements.

Scan Mirror Imbalance-

An initial message from Claudia Woods indicated that she believes that running the scan mirror at 200 rpm versus 20 rpm is not a concern as far as the bearing lubricant is concerned. There is a higher film at the higher speed. There may be a possible retainer imbalance, but this seems unlikely. One question would be the duration of the test. A test of a few seconds would further reduce the concern.

Steve Neeck has provided a reference of a three component dynamometer made by Fujitsu which may be able to make the static imbalance measurements. Steve noted that Fujitsu has made measurements to the 0.004 N level. GSFC will follow up on whether Fujitsu may have off the shelf equipment for making the measurement.

Magnetic Field from ASTER-

Roger Stone was provided a copy of the EMC workshop minutes and presentation materials before he left for a trip to MMAS. Roger was going to follow up on the status of an action item for MMAS to calculate the magnetic field at MODIS assuming worse case emissions from ASTER.

New Titanium Mount Design-

A telemail message was prepared by GSFC to indicate that Al De Forrest's note on the use of the kinematic mounts supplied by GSFC/MMAS was correct. Also, the design of the new titanium mounts is the same dimensionally as the stainless steel mounts which will be used in the Florida vibration tests at Honeywell.

Mike Roberto

August 8, 1994